AMENDMENT OF SOLICITATION/MODIFICATION OF CONTRACT

1. CONTRACT ID CODE	PAGE OF PAGES
******	1 | 1

2. AMENDMENT/MODIFICATION NO.	3. EFFECTIVE DATE	4. REQUISITION/PURCHASE REQ. NO.	5. PROJECT NO. (If applicable)
0002	03 SEP 22	96000 /32194155	

6. ISSUED BY CODE N65540

NSWC CARDEROCK DIVISION
5001 S. BROAD STREET, CODE 3353
PHILADELPHIA PA 19112-1403
BUYER/SYMBOL: L. STIEMKE
PHONE NO. 215-897-1355

7. ADMINISTERED BY (If other than item 6) CODE

8. NAME AND ADDRESS OF CONTRACTOR (No.,street, county, State and ZIP Code)

(X) 9A. AMENDMENT OF SOLICITATION NO.

X N65540-03-Q-0616

9B. DATED (SEE ITEM 11)

03 SEP 08

10A. MODIFICATION OF CONTRACT/ORDER NO.

10B. DATED (SEE ITEM 13)

CODE FACILITY CODE

11. THIS ITEM ONLY APPLIES TO AMENDMENTS OF SOLICITATIONS

[X] The above numbered solicitation is amended as set forth in Item 14. The hour and date specified for receipt of Offers [X] is extended, [ ] is not extended.

Offers must acknowledge receipt of this amendment prior to the hour and date specified in the solicitation or as amended, by one of the following methods.

(a) By completing items 8 and 15, and returning 1 copies of the amendment; (b) By acknowledging receipt of the amendment on each copy of the offer submitted; or (c) By separate letter or telegram which includes a reference to the solicitation and amendment numbers. FAILURE OF YOUR ACKNOWLEDGMENT TO BE RECEIVED AT THE PLACE DESIGNATED FOR THE RECEIPT OF OFFERS PRIOR TO THE HOUR AND DATE SPECIFIED MAY RESULT IN REJECTION OF YOUR OFFER. If by virtue of this amendment you desire to change an offer already submitted, such change may be made by telegram or letter, provided each telegram or letter makes reference to the solicitation and this amendment, and is received prior to the opening hour and date specified.

12. ACCOUNTING AND APPROPRIATION DATA (If required)

13. THIS ITEM APPLIES ONLY TO MODIFICATION OF CONTRACTS/ORDERS, IT MODIFIES THE CONTRACT/ORDER NO. AS DESCRIBED IN ITEM 14.

(X) A. THIS CHANGE ORDER IS ISSUED PURSUANT TO: (Specify authority) THE CHANGES SET FORTH IN ITEM 14 ARE MADE IN THE CONTRACT ORDER NO. IN ITEM 10A.

B. THE ABOVE NUMBERED CONTRACT/ORDER IS MODIFIED TO REFLECT THE ADMINISTRATIVE CHANGES (such as changes in paying office, appropriation data, etc.) SET FORTH IN ITEM 14, PURSUANT TO THE AUTHORITY OF FAR 43.103 (b).

C. THIS SUPPLEMENTAL AGREEMENT IS ENTERED INTO PURSUANT TO AUTHORITY OF:

D. OTHER (Specify type of modification and authority)

E. IMPORTANT: Contractor [ ] is not, [ ] is required to sign this document and return _____ copies to the issuing office.

14. DESCRIPTION OF AMENDMENT/MODIFICATION (Organized by UCF section headings, including solicitation/contract subject matter where feasible)

1) THE DUE DATE FOR RECEIPT OF QUOTATIONS IS CHANGED TO 24 SEPTEMBER 2003.

2) RESPONSES TO QUESTIONS ARE ATTACHED

Except as provided herein, all terms and conditions of the document referenced in Item 9A or 10A, as heretofore changed, remains unchanged and in full force and effect.

15A NAME AND TITLE OF SIGNER (Type or print)		16A. NAME AND TITLE OF CONTRACTING OFFICER (Type or print)	
15B CONTRACTOR/OFFEROR _____ (Signature of person authorized to sign)	15C. DATE SIGNED	16B. UNITED STATES OF AMERICA BY _____ (Signature of Contracting Officer)	16C. DATE SIGNED

RESPONSES TO QUESTIONS FOR RFQ N65540-03-Q-0616

We are preparing a bid on the referenced solicitation and have encountered a problem with the drawings. A number of the military specification integrated circuits called out on the parts list are either quite old or obsolete. In particular, U2/U3 and U4/U7 call for M38510/12802BCX and M38510/1O5O4BEX, respectively. The parts list also shows the commercial equivalents for the MS parts, AD584TH for U2-3 and H15043 for U4 and U7. Are these parts acceptable for this project, assuming the device package is the same? Incidentally, the commercial equivalent for U4/U7 is probably IH5043 rather than HI5043 as shown.

Response: Commercial equivalents can be used as long as they cover the full military temperature range –55C to +125C:

The AD584Th is available from Analog Devices.

The IH5043MJE is available from Maxim IC.

1) There is an opportunity to remake the board to replace the obsolete components would using SMD technology be acceptable? This only means that the parts would become surface mount. We are planning on no value changes whatsoever. (not broke; don't fix it)
Response: Through-hole is preferred, SMD would change the current repair philosophy.

2) There is no test equipment specified. How will I get a first article tested?
Response: Test plans for both boards are attached, a simple test fixture is detailed in the test plans.

3) Can the tester be GFE'd to Alpha Beta Tech (ABT). and witnessed at our location?
Response: See (2).

4) Do the cards need to be conformal coated? Should we plan on testing them and then coating them (our usual practice)? This requires several shipment iterations.
Response: No conformal coating

5) Would a 4 layer card construction be allowed/considered? It does not raise the cost of production significantly and the performance benefits would outweigh any delta in cost.
Response: Why? To do a new layout of the board can only drive the per unit cost.

RESPONSES TO QUESTIONS FOR RFQ N65540-03-Q-0616 (CONTINUED)

6) In researching the parts ABT has found that industrial temperature parts are significantly lower cost than the military grade parts. Not knowing the application of the units makes me ask if the industrial grade parts would be satisfactory?
Response: Mil temp rated parts must be used.

7) We can derate the SMD components by using the next larger package size (0805=1/10W to 1206=1/8W) without any cost penalty in these sizes. At the 1210 packages (1/4W) going to 1812 packages does pose a 2 to 1 cost increase. The question is what is the operating temperatures for us to determine the SMD derating which is necessary?
Response: No SMD components.

TEST REQUIREMENT SPECIFICATION FOR THE AN/BRR-6 DEPTH CANISTER PRINTED CIRCUIT CARD ASSEMBLY 53711 – 7534911

NAVAL SURFACE WARFARE CENTER
CARDEROCK DIVISION, SSES
CODE 962

SEPTEMBER 20, 2003

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1.0 SCOPE

This document covers the alignment and test of the Depth Canister PCB Assemblies (2A4A1) for the AN/BRR-6 Part Number 7534911.

2.0 STATIC FREE STATION REQUIREMENTS

The Depth Canister PCB Assembly incorporates static sensitive devices as part of its internal circuitry. Critical safeguard and precautions must be taken to protect the Depth Card from electrostatic discharge damage. A static free workstation must be utilized while testing this device.

3.0 REQUIRED TEST EQUIPMENT

Equipment	Type
Power Supply	+36VDC
(2) 6 ½ Digit DVM's	HP34401A or Equivalent
Test Leads	

4.0 PROCEDURE

4.1 Power Supply Adjustment

Connecting only the DVM to the power supply output, adjust the power supply for an output of +36.0 $\pm$ 1 V.

4.2 PCB Current Draw

With the power supply turned off, connect the Depth Canister PCB to the test fixture and power supply as shown in Figure 1. Turn on the power supply, measure and record the current draw. Current should be less than 200 mA.

+36 Volt Current. Measured: _____

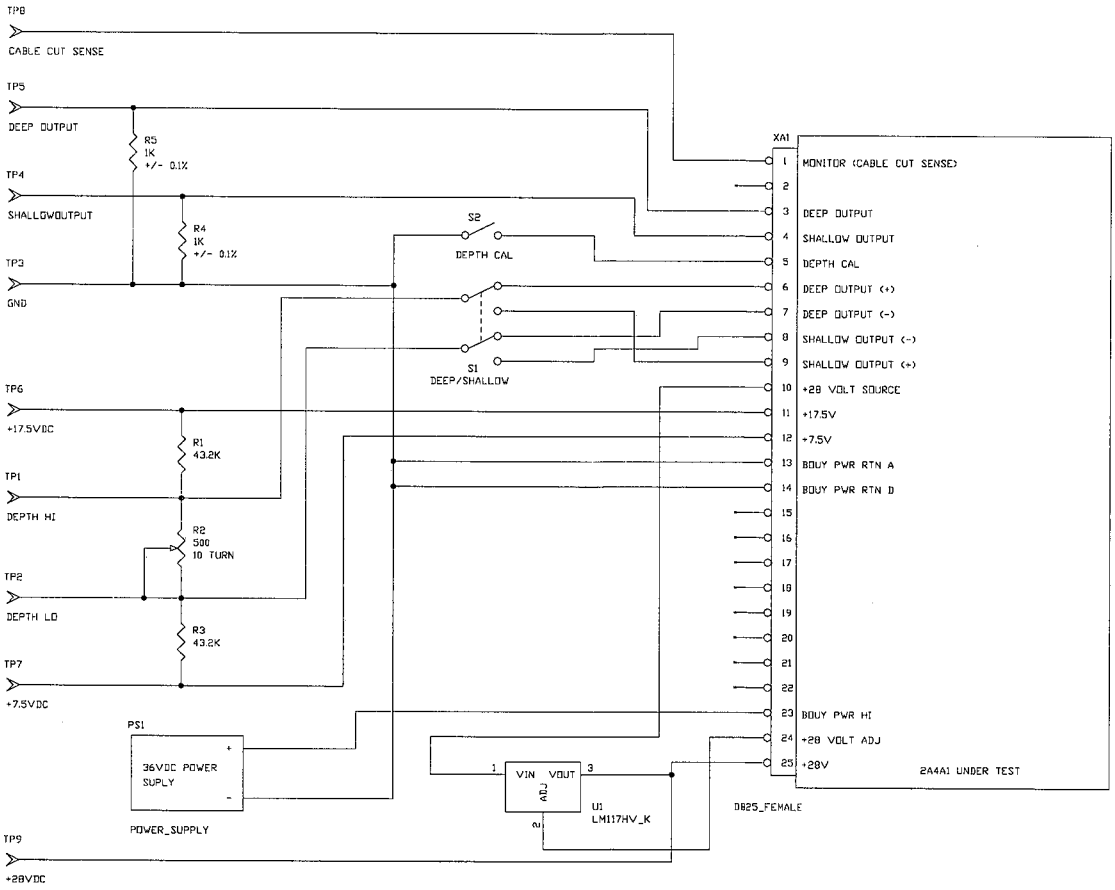

Figure 1. Test Setup

4.3 Voltage Regulators

Using the DVM, check the voltages at the following Test Points.

METER + Lead	-Lead	Measured	Spec.	Function
TP9	TP3	_____	+29.8V ± 1.5V	+28V REGULATOR
TP7	TP3	_____	+7.5V ± 0.75V	+7.5V REGULATOR
TP6	TP7	_____	+10V ± 0.035V	+10V XDCR PWR
TP8	TP3	_____	+7.5V ± 0.75V	CABLE CUT SENSE

4.4 Shallow Depth Bias Offset Adjustment

Connect DVM #1 between TP1 and TP2. Connect DVM #2 between TP4 and TP3. Set switch S1 to the SHALLOW position. Set switch S2 to OPEN. Adjust potentiometer R2 of the test fixture for a 0.000mV $\pm$ 0.010mV reading on DVM #1. Adjust depth card potentiometer R15 until a reading of 0.500V $\pm$ 0.0125V is obtained on DVM #2.

4.4.1 Shallow Depth Performance Test

Adjust potentiometer R2 of the test fixture for inputs according to Table 1 (measured on DVM #1). Measure and record the outputs on DVM #2.

4.42 Shallow Depth CAL

Close switch S2. Measure and record the output on DVM #2. The output voltage should be 2.500 $\pm$ .030 V. Open switch S2.

Shallow Depth CAL. Measured: _____

Table 1
Shallow Depth Performance Test

PSI	FEET	INPUT $\pm$ 0.010 mV	OUTPUT	TOLERANCE	MEASURED
0.0	0	0.000 mV	0.500 V	$\pm$12.5 mV	_____V
2.22	5	2.000 mV	0.750 V	$\pm$12.5 mV	_____V
4.43	10	4.000 mV	1.000 V	$\pm$12.5 mV	_____V
6.65	15	6.000 mV	1.250 V	$\pm$12.5 mV	_____V
8.86	20	8.000 mV	1.500 V	$\pm$12.5 mV	_____V
11.08	25	10.000 mV	1.750 V	$\pm$12.5 mV	_____V
13.29	30	12.000 mV	2.000 V	$\pm$12.5 mV	_____V
15.51	35	14.000 mV	2.250 V	$\pm$12.5 mV	_____V
17.72	40	16.000 mV	2.500 V	$\pm$12.5 mV	_____V
19.94	45	18.000 mV	2.750 V	$\pm$12.5 mV	_____V
22.15	50	20.000 mV	3.00 V	$\pm$12.5 mV	_____V

4.5 Deep Depth Bias Offset Adjustment

Connect DVM #1 between TP1 and TP2. Connect DVM #2 between TP5 and TP3. Set switch S1 to the DEEP position. Set switch S2 to OPEN. Adjust potentiometer R2 of the test fixture for a 0.000mV ± 0.010mV reading on DVM #1. Adjust depth card potentiometer R16 until a reading of 0.500V ± 0.0125V is obtained on DVM #2.

4.5.1 Deep Depth Performance Test

Adjust potentiometer R2 of the test fixture for inputs according to Table 2 (measured on DVM #1). Measure and record the outputs on DVM #2.

4.52 Deep Depth CAL

Close switch S2. Measure and record the output on DVM #2. The output voltage should be 3.000 ± .030 V. Open switch S2.

Deep Depth CAL. Measured: _____

Table 2
Deep Depth Performance Test

PSI	FEET	INPUT ± 0.010 mV	OUTPUT	TOLERANCE	MEASURED
0.0	0	0.000 mV	0.500 V	±12.5 mV	_____V
44.3	100	3.000 mV	0.750 V	±12.5 mV	_____V
88.6	200	6.000 mV	1.000 V	±12.5 mV	_____V
132.9	300	9.000 mV	1.250 V	±12.5 mV	_____V
177.2	400	12.000 mV	1.500 V	±12.5 mV	_____V
221.5	500	15.000 mV	1.750 V	±12.5 mV	_____V
265.8	600	18.000 mV	2.000 V	±25.0 mV	_____V
310.1	700	21.000 mV	2.250 V	±25.0 mV	_____V
354.4	800	24.000 mV	2.500 V	±25.0 mV	_____V
398.7	900	27.000 mV	2.750 V	±25.0 mV	_____V
443.0	1000	30.000 mV	3.000 V	±25.0 mV	_____V

TEST REQUIREMENT SPECIFICATION FOR THE AN/BRR-6B DEPTH CANISTER PRINTED CIRCUIT CARD ASSEMBLY 53711 – 7534928

NAVAL SURFACE WARFARE CENTER
CARDEROCK DIVISION, SSES
CODE 962

SEPTEMBER 20, 2003

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LIST OF ILLUSTRATIONS

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2	Deep Depth Performance Test	6

1.0 SCOPE

This document covers the alignment and test of the Depth Canister PCB Assemblies (2A4A1) for the AN/BRR-6B Part Number 7534928.

2.0 STATIC FREE STATION REQUIREMENTS

The Depth Canister PCB Assembly incorporates static sensitive devices as part of its internal circuitry. Critical safeguard and precautions must be taken to protect the Depth Card from electrostatic discharge damage. A static free workstation must be utilized while testing this device.

3.0 REQUIRED TEST EQUIPMENT

Equipment	Type
Power Supply	+36VDC
(2) 6 ½ Digit DVM's	HP34401A or Equivalent
Test Leads	

4.0 PROCEDURE

4.1 Power Supply Adjustment

Connecting only the DVM to the power supply output, adjust the power supply for an output of +36.0 ± 1 V.

4.2 PCB Current Draw

With the power supply turned off, connect the Depth Canister PCB to the test fixture and power supply as shown in Figure 1. Turn on the power supply, measure and record the current draw. Current should be less than 200 mA.

+36 Volt Current. Measured: _____

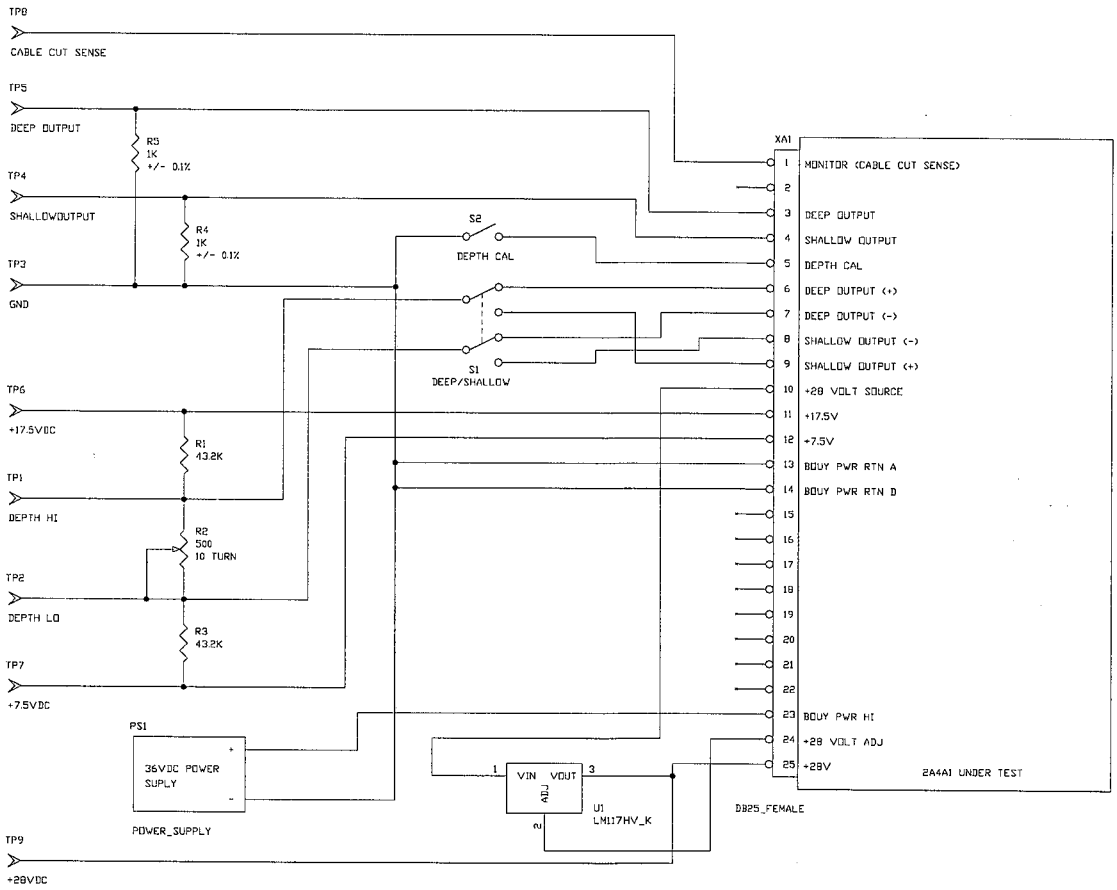

Figure 1. Test Setup

4.3 Voltage Regulators

Using the DVM, check the voltages at the following Test Points.

METER + Lead	-Lead	Measured	Spec.	Function
TP9	TP3	_____	+29.8V ± 1.5V	+28V REGULATOR
TP7	TP3	_____	+7.5V ± 0.75V	+7.5V REGULATOR
TP6	TP7	_____	+10V ± 0.035V	+10V XDCR PWR
TP8	TP3	_____	+7.5V ± 0.75V	CABLE CUT SENSE

4.4 Shallow Depth Bias Offset Adjustment

Connect DVM #1 between TP1 and TP2. Connect DVM #2 between TP4 and TP3. Set switch S1 to the SHALLOW position. Set switch S2 to OPEN. Adjust potentiometer R2 of the test fixture for a 0.000mV ± 0.010mV reading on DVM #1. Adjust depth card potentiometer R15 until a reading of 1.500V ± 0.0125V is obtained on DVM #2.

4.4.1 Shallow Depth Performance Test

Adjust potentiometer R2 of the test fixture for inputs according to Table 1 (measured on DVM #1). Measure and record the outputs on DVM #2.

4.42 Shallow Depth CAL

Close switch S2. Measure and record the output on DVM #2. The output voltage should be 3.500 ± .030 V. Open switch S2.

Shallow Depth CAL. Measured: _____

Table 1
Shallow Depth Performance Test

PSI	FEET	INPUT ± 0.010 mV	OUTPUT	TOLERANCE	MEASURED
0.0	0	0.000 mV	1.500 V	±12.5 mV	_____V
4.43	10	4.000 mV	2.000 V	±12.5 mV	_____V
8.86	20	8.000 mV	2.500 V	±12.5 mV	_____V
13.29	30	12.000 mV	3.000 V	±12.5 mV	_____V
17.72	40	16.000 mV	3.500 V	±12.5 mV	_____V
22.15	50	20.000 mV	4.000 V	±12.5 mV	_____V
26.58	60	24.000 mV	4.500 V	±25.0 mV	_____V
31.01	70	28.000 mV	5.000 V	±25.0 mV	_____V
35.44	80	32.000 mV	5.500 V	±25.0 mV	_____V
39.87	90	36.000 mV	6.000 V	±25.0 mV	_____V
44.30	100	40.000 mV	6.500 V	±25.0 mV	_____V

4.5 Deep Depth Bias Offset Adjustment

Connect DVM #1 between TP1 and TP2. Connect DVM #2 between TP5 and TP3. Set switch S1 to the DEEP position. Set switch S2 to OPEN. Adjust potentiometer R2 of the test fixture for a 0.000mV ± 0.010mV reading on DVM #1. Adjust depth card potentiometer R16 until a reading of 1.500V ± 0.0125V is obtained on DVM #2.

4.5.1 Deep Depth Performance Test

Adjust potentiometer R2 of the test fixture for inputs according to Table 2 (measured on DVM #1). Measure and record the outputs on DVM #2.

4.52 Deep Depth CAL

Close switch S2. Measure and record the output on DVM #2. The output voltage should be 6.500 ± .030 V. Open switch S2.

Deep Depth CAL. Measured: _____

Table 2
Deep Depth Performance Test

PSI	FEET	INPUT ± 0.010 mV	OUTPUT	TOLERANCE	MEASURED
0.0	0	0.000 mV	1.500 V	±12.5 mV	_____V
44.3	100	3.000 mV	2.000 V	±12.5 mV	_____V
88.6	200	6.000 mV	2.500 V	±12.5 mV	_____V
132.9	300	9.000 mV	3.000 V	±12.5 mV	_____V
177.2	400	12.000 mV	3.500 V	±12.5 mV	_____V
221.5	500	15.000 mV	4.000 V	±12.5 mV	_____V
265.8	600	18.000 mV	4.500 V	±25.0 mV	_____V
310.1	700	21.000 mV	5.000 V	±25.0 mV	_____V
354.4	800	24.000 mV	5.500 V	±25.0 mV	_____V
398.7	900	27.000 mV	6.000 V	±25.0 mV	_____V
443.0	1000	30.000 mV	6.500 V	±25.0 mV	_____V